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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/080,515 | 02/25/2002 | Michael Schmidt | MERCK-2381 | 8634 |

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| EXAMINER |
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TSANG FOSTER, SUSY N

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| ART UNIT | PAPER NUMBER |
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1745

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--|---------------------------------------|--|
| Office Action Summary | Application No. 10/080,515 | Applicant(s) SCHMIDT ET AL. | |
| | Examiner Susy N Tsang-Foster | Art Unit 1745 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/16/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 13-19, 21-25 and 28-40 is/are rejected.
- 7) ☒ Claim(s) 4-12, 20, 26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of the $[N(R^7)_4]^+$ cation as the M^{a+} species in the reply filed on 6/16/2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Since the Examiner was not able to find any art for the species elected, a search was extended for all the claimed M^{a+} species.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. The disclosure is objected to because of the following informalities: Applicant mentions Figure 1 under the heading 'BRIEF DESCRIPTION OF THE DRAWINGS'. However, Figure 1 was not filed with the application. It is recommended that applicant delete this section of the specification regarding the drawings since no drawings were timely filed. Also note applicant's

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current PB-PUB document corresponding to this application (US 2002/0122979 A1) which does not contain Figure 1.

Appropriate correction is required.

Claim Objections

4. Claims 7 and 10 are objected to because of the following informalities:

In claims 7 and 10, the respective Markush groups should contain the phrase “selected from the group consisting of”.

Appropriate correction is required.

5. Claims 8 and 9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

In claim 8, the limitation “wherein A is in each case a 5- or 6- membered aromatic radical which optionally contains nitrogen, sulfur, and/or oxygen atoms, or a cycloalkyl radical having 5 or 6 members” does not further limit claim 7 because claim 8 does not require R⁷ to be A but only defines what A can be. Claim 9 is rejected for the same because it depends from claim 8.

6. Claims 7-10, 12, 28-31, and 34-40 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

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Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 7 and 10 do not respectively further limit claim 6 because claim 6 is drawn to an organic cation whereas claims 7 and 10 each recites a nitrosyl cation and a nityrl cation which are not organic cations.

Claims 8 and 9 depending from claim 7 are rejected for the same.

Claim 12 does not further limit claim 10 because claim 10 does not recite R^1 to R^6 .

Claims 28-31 each do not further limit claim 25 since claim 25 is drawn to a process.

Claims 34-40 each do not further limit claim 33 because the preamble of claim 33 is drawn to multiple inventions.

Claim Rejections - 35 USC § 112

7. Claims 25, and 28-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 25 and 32, the limitation “an at least partially fluorinated derivative of any of these solvents, or a mixture of at least two of these solvents and/or fluorinated derivatives of these solvents” is indefinite because it is unclear what are these fluorinated derivatives.

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In claim 28, the limitation “wherein component b) is a homopolymer or copolymer of acrylonitrile...” lacks antecedent basis in the claim.

In claim 29, the limitation “wherein b) is a homopolymer or copolymer...” lacks antecedent basis in the claim.

In claim 30, the limitation “where said polymer is at least partially crosslinked” lacks antecedent basis in the claim.

In claim 31, the limitation “where said it additionally comprises at least one solvent” is indefinite because it is unclear what “it” is referring to in the limitation.

It is noted that in claim 33, the preamble is drawn to multiple inventions recited in the alternative language and it is unclear which invention comprises the limitation recited in the body of the claim.

Also in claim 33, the limitation “further conductive salts and/or additives” is indefinite because it is unclear what these conductive salts or additives are.

Claims depending from claims rejected under 35 USC 112, second paragraph are also rejected for the same.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-3, 13-17, 21-25, and 33-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Fild, M. et al. ("Methylene Compounds of nonmetals. V. Methylenediphosphorous halides", Z. ANORG. ALLG. Chem. (1987), 555, 109-17- Note oral translation of reference obtained from the USPTO STIC Translation Branch on 7/19/2004).

Fild et al. disclose a method of preparing $K_2[F_5PCH_2PF_5]$ by suspending in acetonitrile, 5.9 mmol potassium fluoride and 3.2 mmol of $F_4PCH_2PF_4$ and heating the mixture within 1 hour from $-78^\circ C$ to room temperature with the KF being dissolved (page 116 of reference). Since the compound formed is in a solution containing dissolved potassium fluoride, the solution can be considered an electrolyte.

10. Claims 1, 18, 19, 21, and 33-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Schmidt et al. (US2002/0015884 A1)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

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inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Schmidt et al. disclose ionic liquids comprising K^+A^- as defined in the reference that are suitable for use in electrochemical cells and capacitors (see abstract). The reference also discloses that the K^+A^- compounds may be present in electrolytes which comprise fluoroalkyl phosphate salts having the same formula given by instant claim 1 (see paragraph 169-180 of the reference).

Allowable Subject Matter

11. Claims 4-6, 11, 20, 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art of record, Fild et al. and Schmidt et al. (US2002/0015884 A1) both do not disclose, teach, or suggest the following distinguishing features: that the cation is a lithium cation (applies to claim 4), that the cation is a magnesium or aluminum cation (applies to claim 5), that the cation is an organic cation (applies to claim 6), that the salt has the specific formulas given in instant claim 20, that the cation is a heteroaromatic cation of formulas (II)-(IX) given by claim 11, and a mixture comprising at least one of fluoroalkylphosphate salt having the formula of instant claim 1 and at least one polymer (applies to claims 26 and 27).

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Conclusion

Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (571) 272-1293. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (571) 272-1292.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

st/ 

Susy Tsang-Foster
Primary Examiner
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